

AMENDMENTS TO THE CLAIMS

- 6000c1 >
1. (Previously presented) A method of communicating over a wireless indoor telecommunications channel, the method comprising the steps of:
    - generating a pulsed signal in which information is carried in the phase of the pulsed signal;
    - spreading the pulsed signal using a dispersive filter to form a chirp spread spectrum signal;
    - transmitting the chirp spread spectrum signal over a wireless indoor telecommunications channel;
    - receiving the chirp spread spectrum signal at a receiver;
    - despreading the chirp spread spectrum signal using an inverse dispersive filter that is matched to the dispersive filter to yield a received signal;
    - removing the phase of the received signal, using a phase demodulator, thereby generating cophased channel impulse responses;
    - passing the cophased channel impulse responses through a low-pass filter to generate data symbols; and
    - recovering the information carried in the phase of the pulsed signal from the generated data symbols.
  2. (Original) The method of Claim 1 in which generating a pulsed signal comprises:
    - modulating a data signal onto a carrier using a phase differential modulator; and
    - converting the modulated carrier into a pulsed signal.
  3. (Original) The method of Claim 1 in which the chirp signal is generated using plural dispersive filters, each assigned to a particular symbol value, and the chirp spread

spectrum signal is despread using plural inverse dispersive filters matched to corresponding ones of the plural dispersive filters.

648C' → 4. (Cancelled)

5. (Original) The method of Claim 1 in which the dispersive filter is a SAW filter.

6. (Currently amended) The method of Claim 1 in which recovering the information carried in the phase of the ~~received~~ pulsed signal comprises applying an equalizer to the cophased channel impulse responses to reduce intersymbol interference caused by the channel multipath.

7. (Currently amended) The method of Claim 6 in which applying an equalizer to the ~~received~~ pulsed signal comprises training the equalizer with a slow phase demodulator and applying the received pulsed signal to the equalizer to the cophased channel impulse responses after demodulation with a fast phase demodulator.

8. (Currently amended) A transmitter for communicating over a wireless indoor communications channel, the ~~apparatus~~ transmitter comprising:

a pulsed signal generator;

a dispersive filter bank comprising plural filters, the dispersive filter bank being connected to receive a pulsed signal from the pulsed signal generator, where the excitation of each of the plural filters corresponds to a different transmitted symbol value, the output of the dispersive filter bank being a chirp spread spectrum signal; and

an RF section for upconverting the chirp spread spectrum signal for transmission.

9. (Original) The transmitter of Claim 8 in which the pulsed signal generator comprises:

a data source;

a differential phase modulator connected to receive data from the data source; and

an RF pulse generator connected to receive a modulated signal from the differential phase modulator.

10. (Cancelled)

*Sub 11* 11. (Previously presented) A receiver for communicating over a wireless indoor communications channel with a transmitter defined by Claim 8, the receiver comprising:

an RF receiving section configured to produce a received chirp spread spectrum signal as output;

an inverse dispersive filter matched to the dispersive filter in the transmitter and connected to receive the chirp spread spectrum signal from the RF receiving section and generate a received pulsed signal;

a phase demodulator connected to the inverse dispersive filter, the phase demodulator generating cophased channel impulse responses from the received pulsed signal;

a low-pass filter on the output of the phase demodulator for generating data symbols from the cophased channel impulse responses; and

a data extractor connected to the low pass filter, the data extractor recovering originally transmitted information from the data symbols and having data as output.

12. (Cancelled)

*Sub 13* 13. (New) The transmitter of Claim 8 in which the excitation of the plural filters is controlled by a signal from a data source.